

Patent claims

1. A roller screw drive having a spindle nut (2) arranged on a threaded spindle (1), and having rollers (3) which are arranged such that they can roll in a thread path (4), the thread path (4) being delimited by thread grooves (8a, 11, 20) provided on the threaded spindle (1) and on the spindle nut (2), **characterized** in that the two equal pitches (p) of the thread grooves (8a, 11, 20) are arranged so as to be axially offset with respect to one another by a partial amount (a) of the pitch (p).
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- 15 2. A roller screw drive having a spindle nut (2) arranged on a threaded spindle (1), and having rollers (3) which are arranged such that they can roll in a thread path (4), the thread path (4) being formed by thread grooves (8a, 11, 20) provided on the threaded spindle (1) and on the spindle nut (2), which thread grooves (8a, 11, 20) are each delimited by two thread flanks (9, 10, 12, 13, 21, 22), the rollers (3) rolling on thread flanks (9, 10, 12, 13, 21, 22), which face one another, of the two thread grooves (8a, 11, 20), **characterized** in that the thread flanks (9, 10, 12, 13, 21, 22) are longer than the rollers (3), a free space (26, 27) being formed between end sides of the rollers and thread flanks (9, 10, 12, 13, 21, 22) situated opposite said end sides.
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- 30 3. The roller screw drive as claimed in claim 2, in which the free space (26, 27) is formed as a lubricant reservoir.
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4. The roller screw drive as claimed in claim 1 or 2, in which a cage (15, 18) is provided for guiding

the rollers, rollers (3) being held in the pockets (16, 25) of said cage (15, 18), the cage (15, 18) having belts (17, 19) and said belts (17, 19) having webs connecting them to one another, the belts (17, 19) being arranged in the free space (26, 27).

5. The roller screw drive as claimed in claim 4, in which the belts (17, 19), which are arranged at a distance from one another, span one plane, the rotational axes of the rollers (3) being arranged parallel to the plane and transversely with respect to belts (17, 19).

10 15. 6. The roller screw drive as claimed in claim 4, in which the webs and the free space (26, 27) loop around the rotational axis of the roller screw drive in the manner of a screw.

20 7. The roller screw drive as claimed in claim 1 or 2, in which a first roller set formed from rollers (3) is arranged such that it can roll in a first thread path (5), and a second roller set is arranged such that it can roll in a second thread path (6).

25 8. The roller screw drive as claimed in claim 7, in which the rotational axes of the rollers (3) of the first roller set are arranged at an angle to the rotational axes of the rollers (3) of the second roller set.

30 35. 9. The roller screw drive as claimed in claim 8, in which rollers (3) of the first roller set are arranged such that they can roll on one thread flank (9) of the thread groove (8a) of the threaded spindle (1), and the rollers (3) of the

second roller set are arranged such that they can roll on the other thread flank (10) of the thread groove (8a) of the threaded spindle (1).

- 5 10. The roller screw drive as claimed in claim 9, in which the spindle nut (2) has two first and second nut parts (7, 8) arranged one behind the other axially, the first roller set being arranged in the first nut part (7) and the second roller set 10 being arranged in the second nut part (8).
11. The roller screw drive as claimed in claim 10, in which a spacer (24) is provided which keeps the two nut parts (7, 8) at an axial distance from one 15 another and defines an axial distance dimension which is such that the nut parts (7, 8) are kept in a prestressed state with the threaded spindle (1).
- 20 12. The roller screw drive as claimed in claim 1 or 2, in which the two thread flanks (9, 10, 12, 13, 21, 22) of the thread groove (8a, 11, 20) are perpendicular to one another, the partial amount (a) corresponding to approximately 30%, preferably 25 28%, of the absolute value of the pitch (p).